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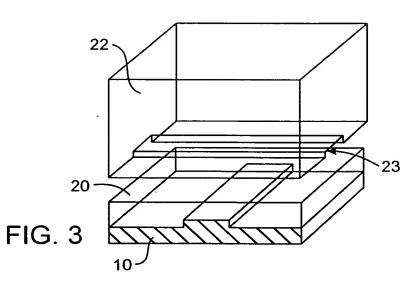
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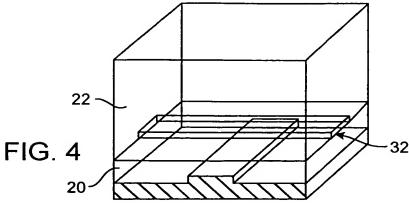
20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 1 of 53

20 22 11 23

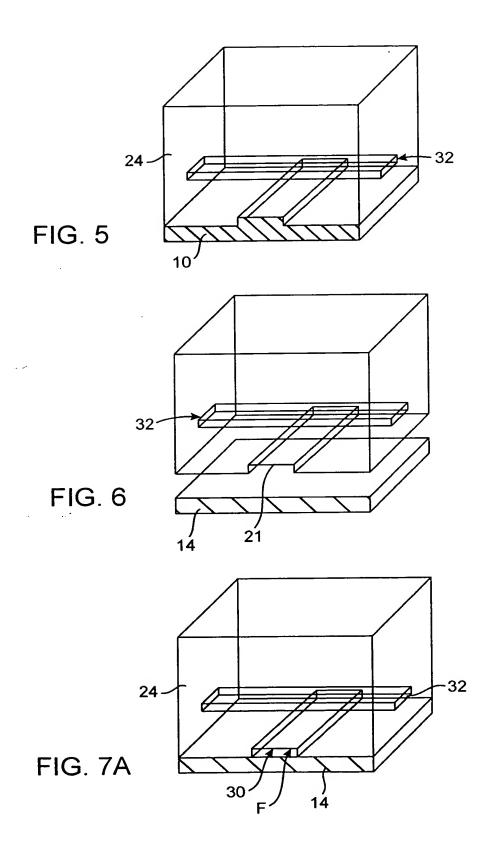
FIG. 2

FIG. 1





20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 2 of 53



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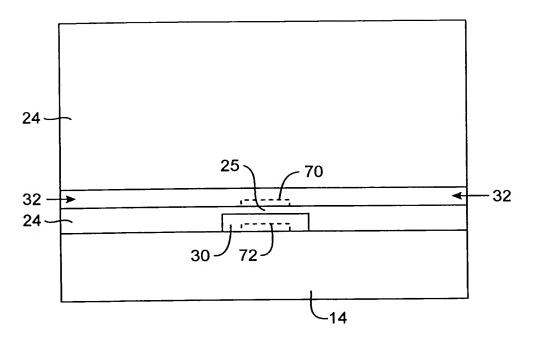


FIG. 7B

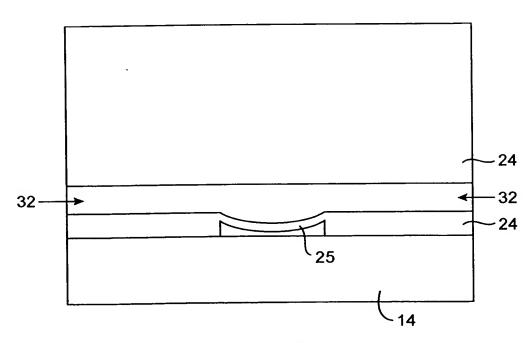
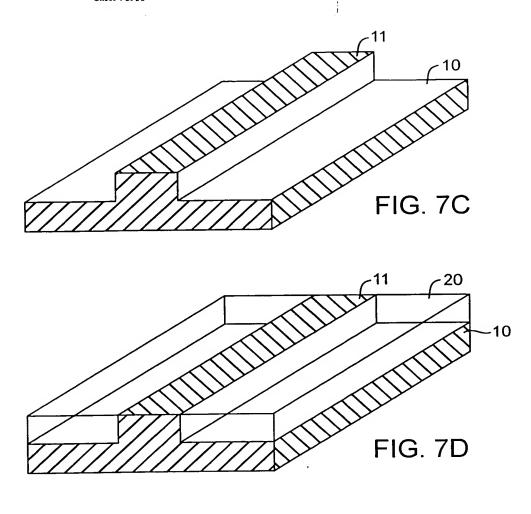
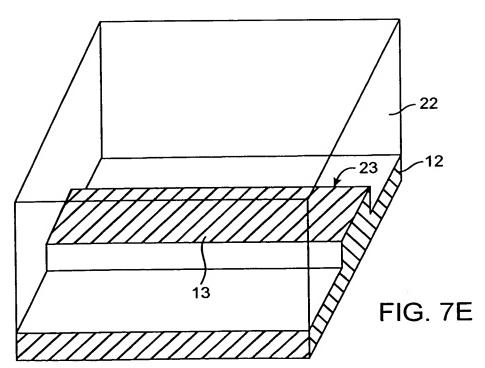


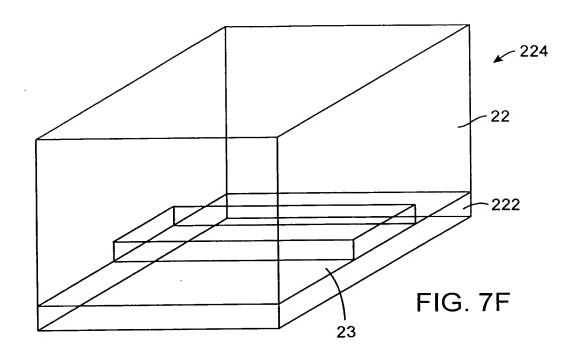
FIG. 7H

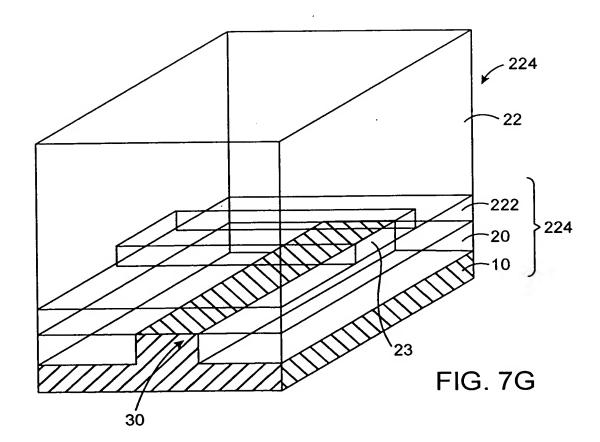
20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 4 of 58





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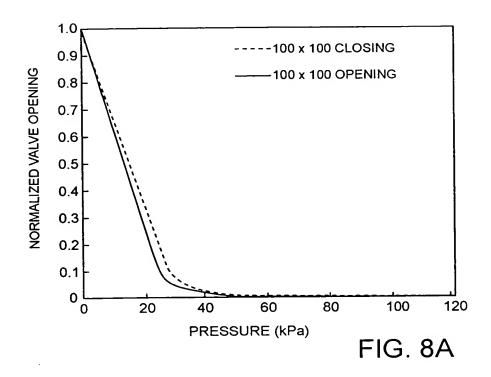




20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400

Title: Microfluidic Protein Crystallography...

Inventors: Carl L. Hansen et al. Sheet 6 of 53



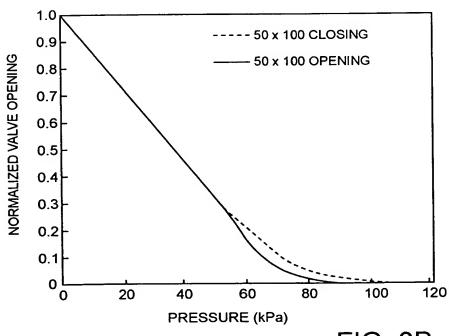
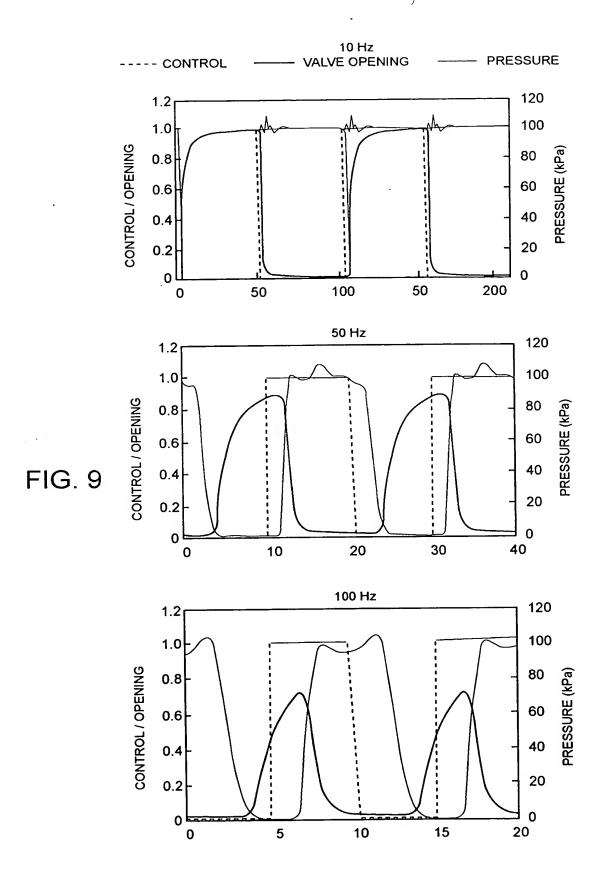
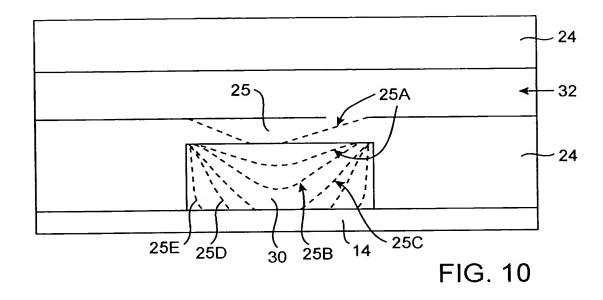


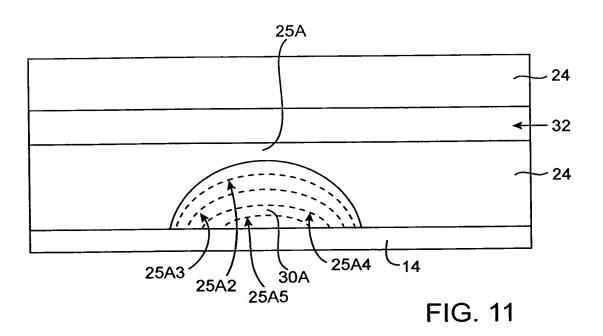
FIG. 8B

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23B 30 F 23B 30 5 23B 30 30 32 30

FIG. 12A

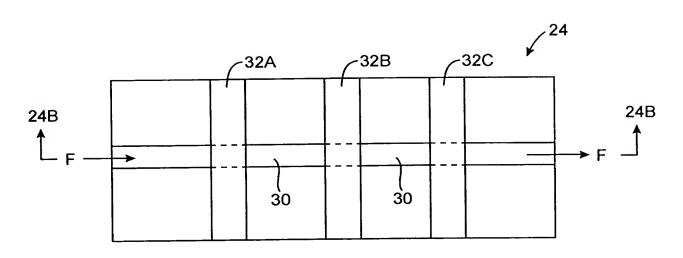


FIG. 13A

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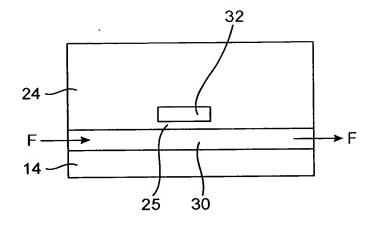


FIG. 12B

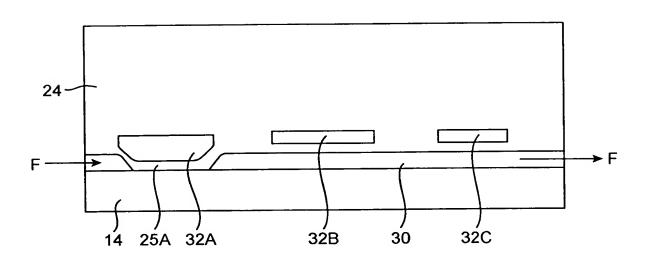


FIG. 13B

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 11 of 53

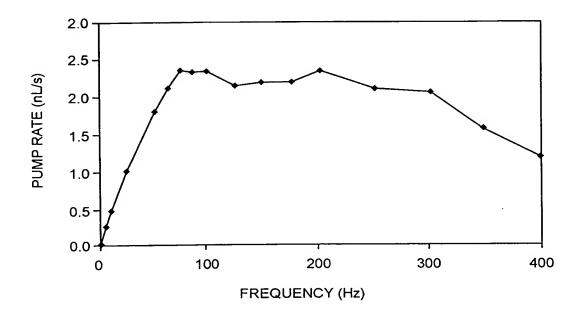
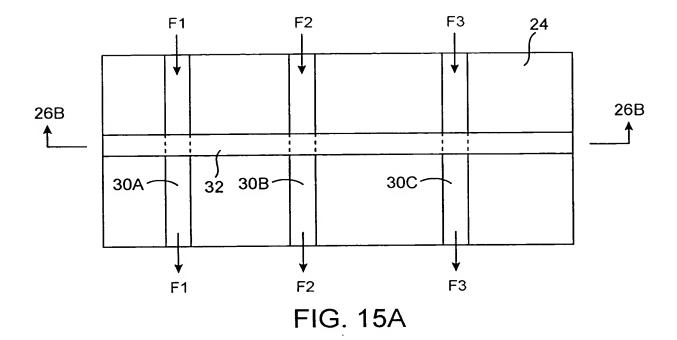
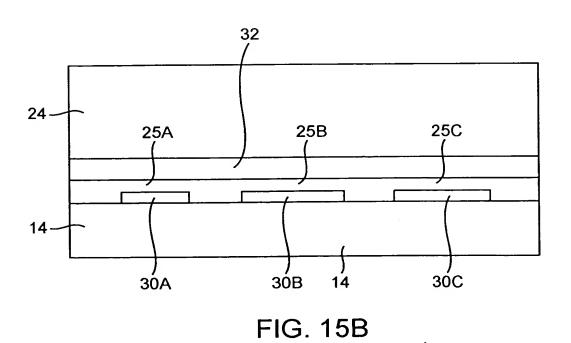


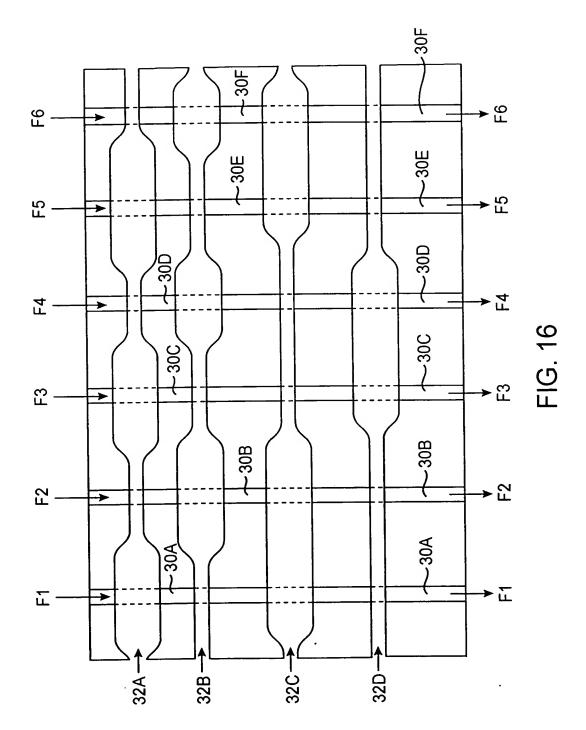
FIG. 14

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20174C-004960US, Appln No. To be assigned Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 14 of 53

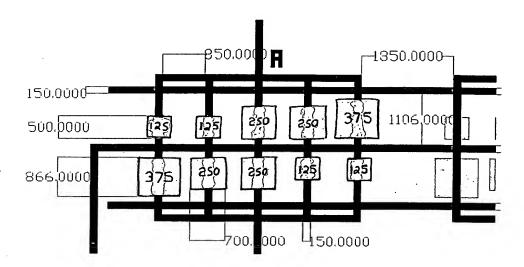


FIGURE 17

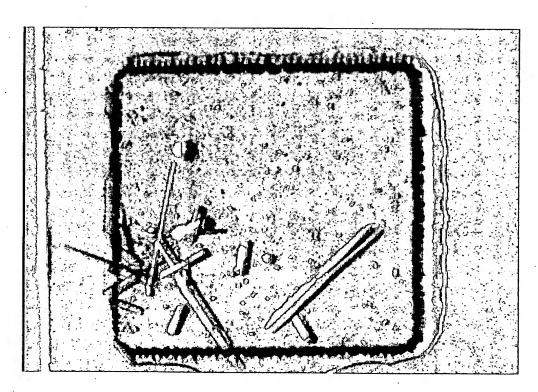
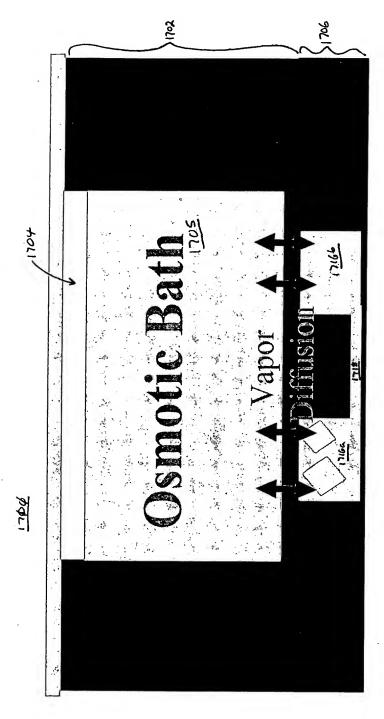


FIGURE 18

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FIGUNE 19A

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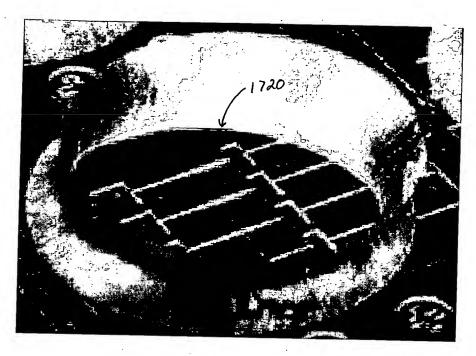


FIGURE 19B

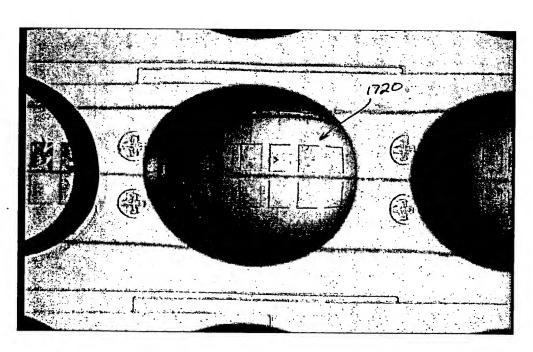


FIGURE 19C

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 17 of 53

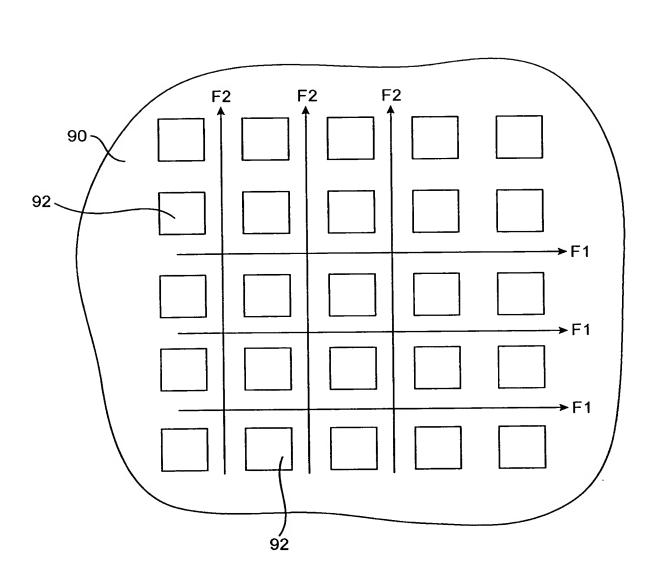


FIG. 20A

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 18 of 53

FIG 20B

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Sheet 19 of 53

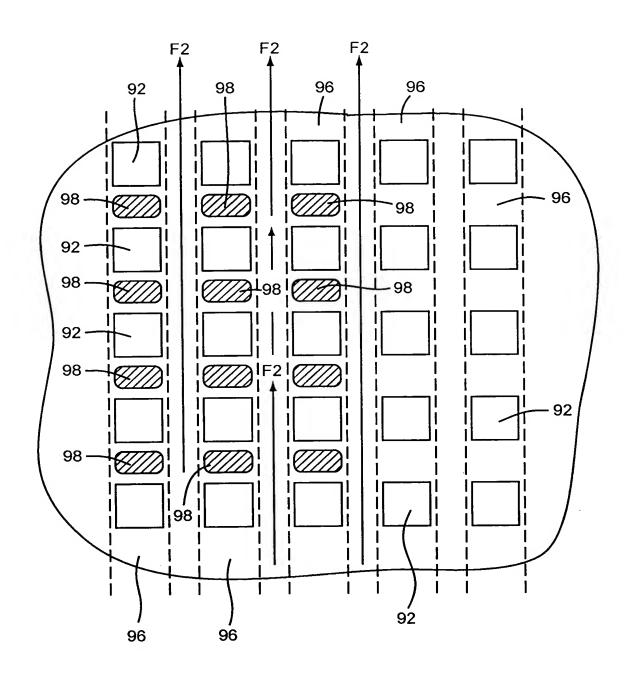


FIG. 20C

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 20 of 53

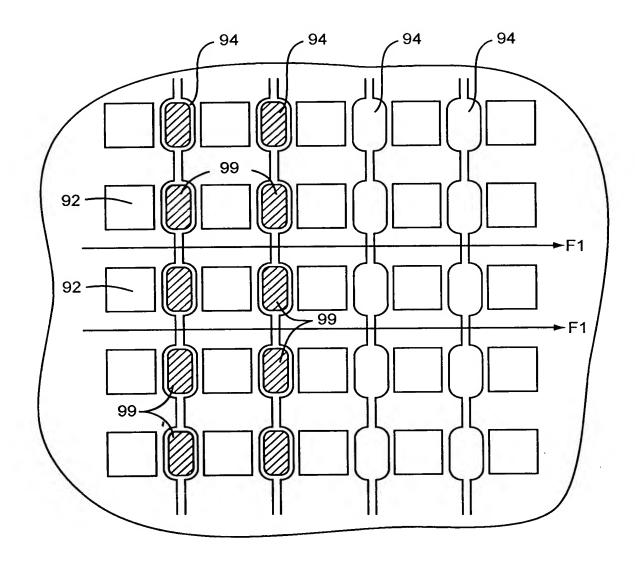
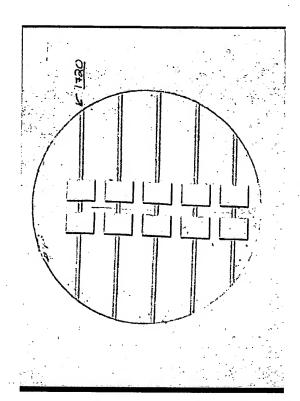
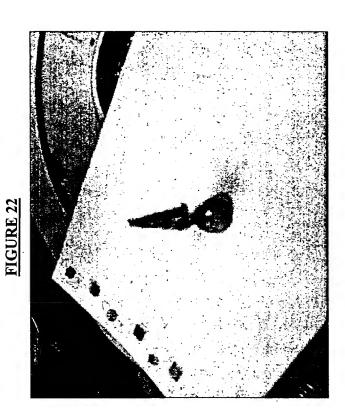
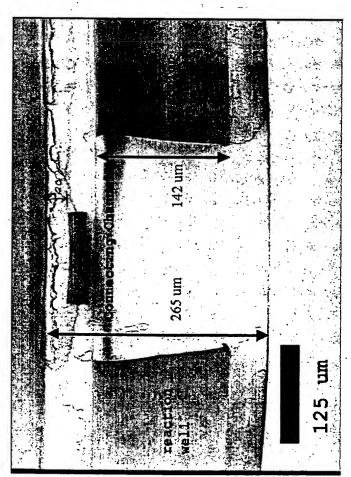


FIG. 20D

20174C-004960US, Appln No. To be assigned Kent J. Tobin, Reg. No. 39,496
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Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 21 of 53







20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 22 of 53

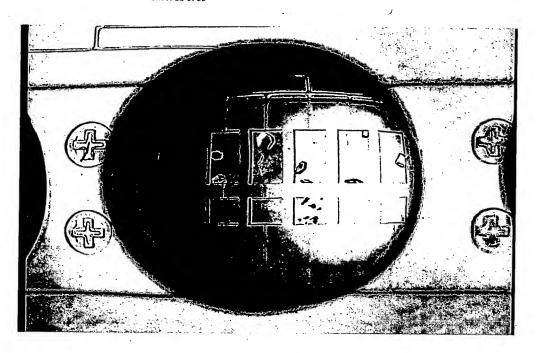


FIGURE 24

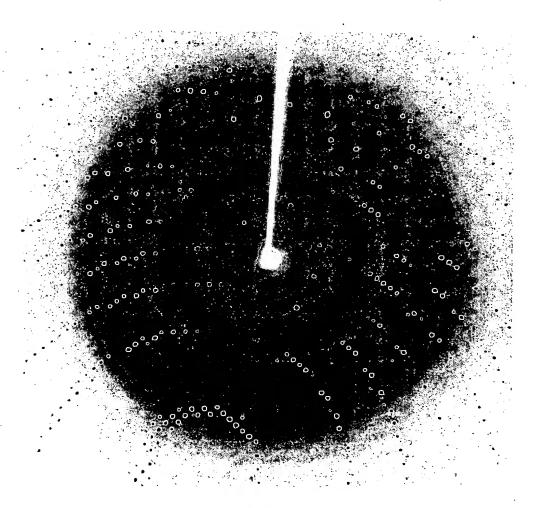
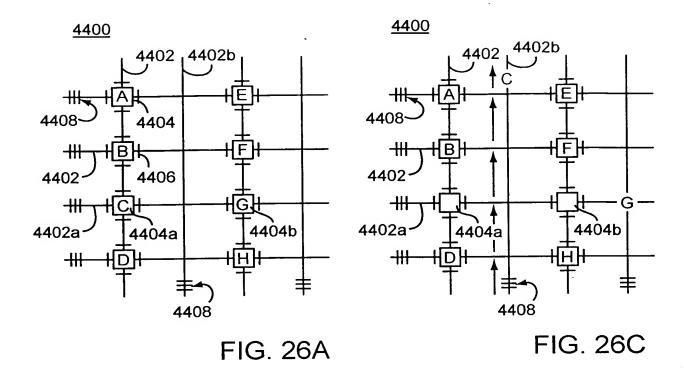
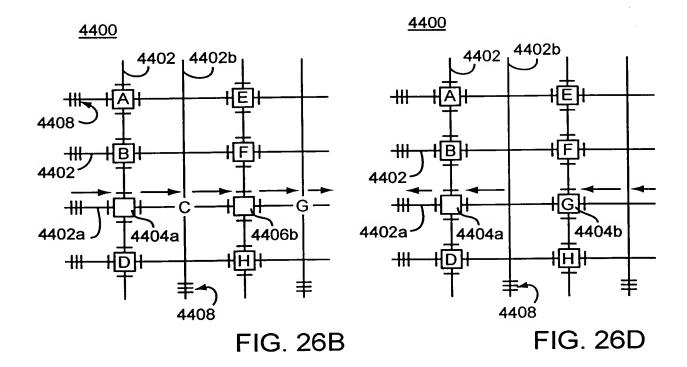


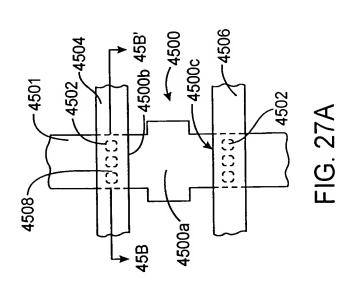
FIGURE 25

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 23 of 53





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Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 24 of 53



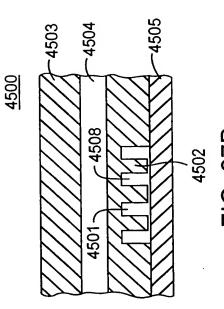
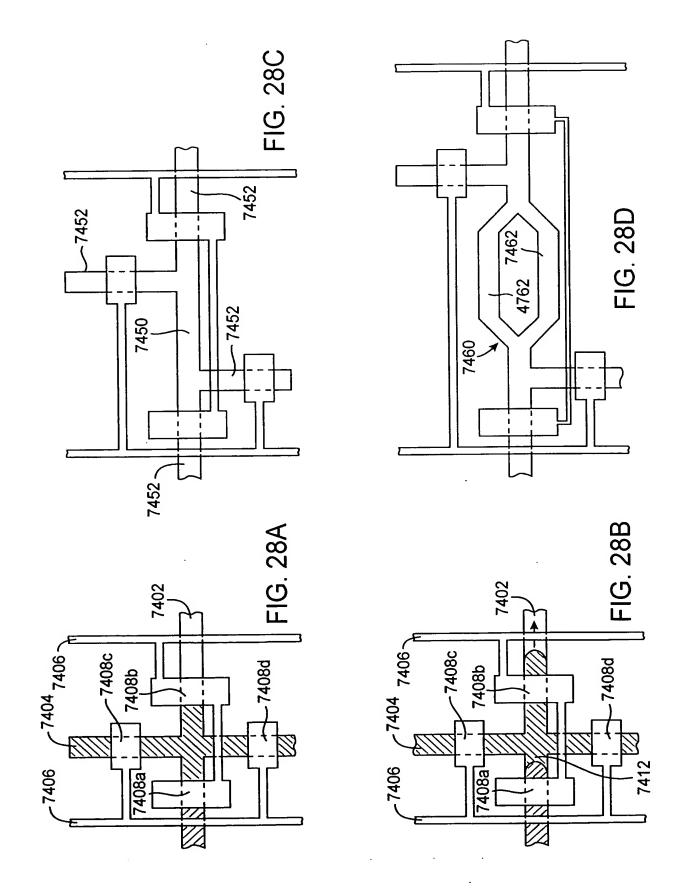
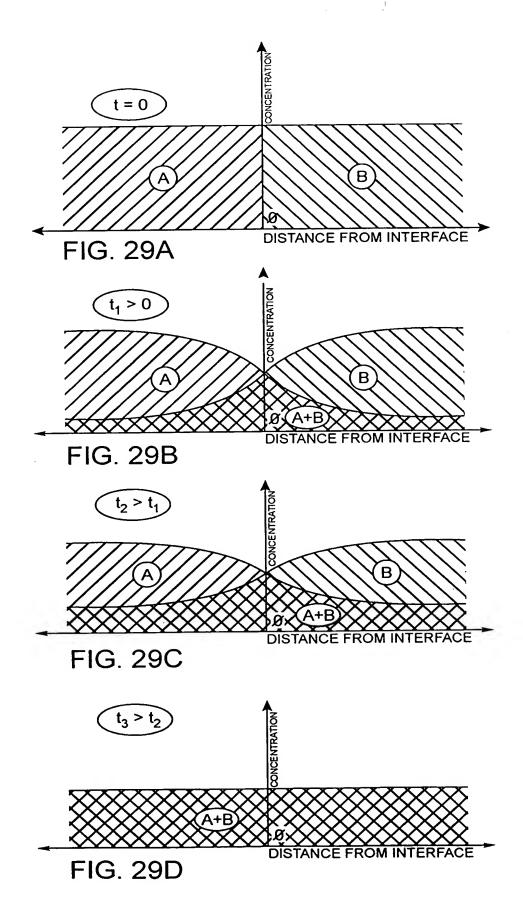


FIG. 27B

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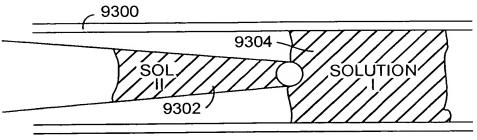


FIG. 30A (Prior Art)

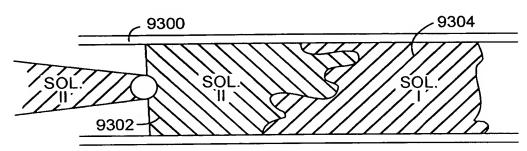


FIG. 30B (Prior Art)

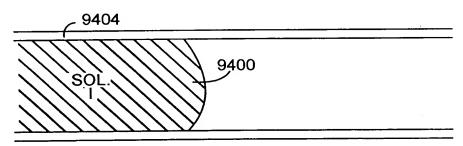


FIG. 31A (Prior Art)

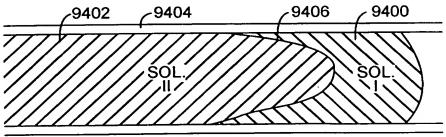


FIG. 31B (Prior Art)

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 28 of 53

t=0;  $e_{I}>e_{I}$ 

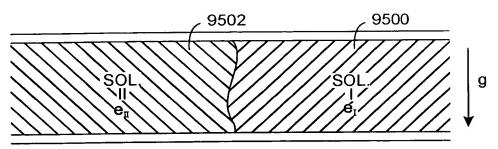


FIG. 32A (Prior Art)

 $t_1 > 0$ 

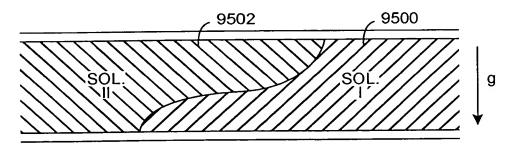
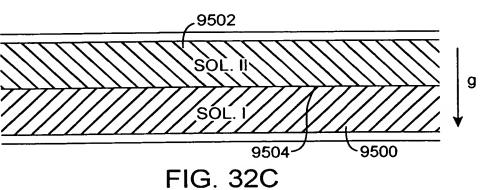


FIG. 32B (Prior Art)

 $t_2 > t_1$ 



(Prior Art)

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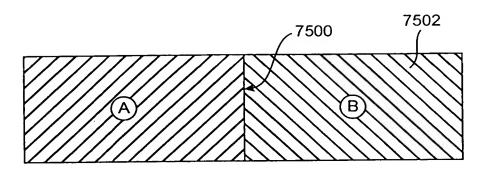


FIG. 33A

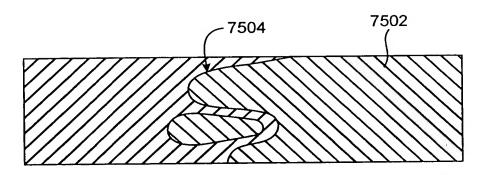
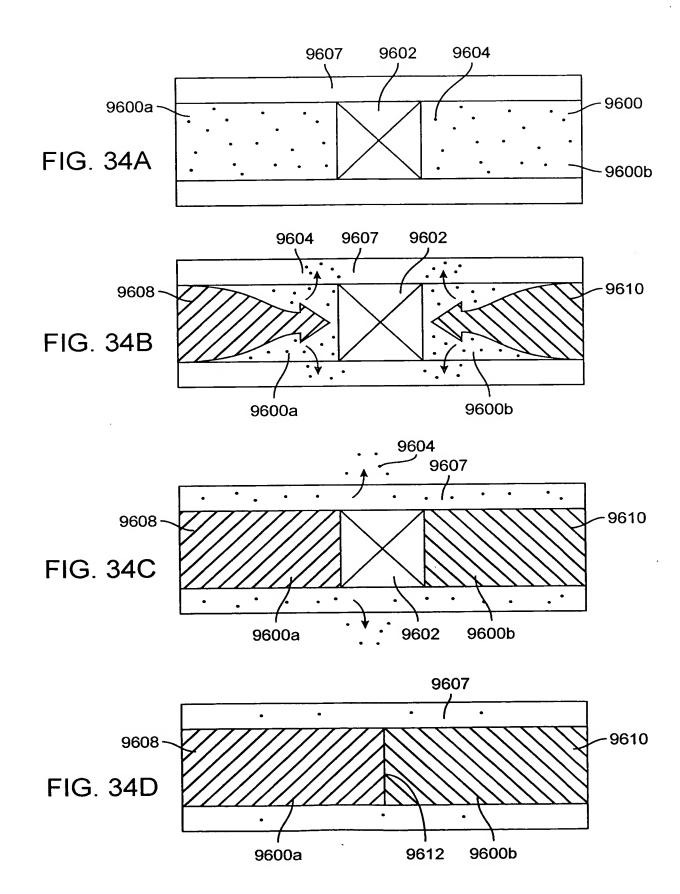


FIG. 33B (PRIOR ART)

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400

Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al.

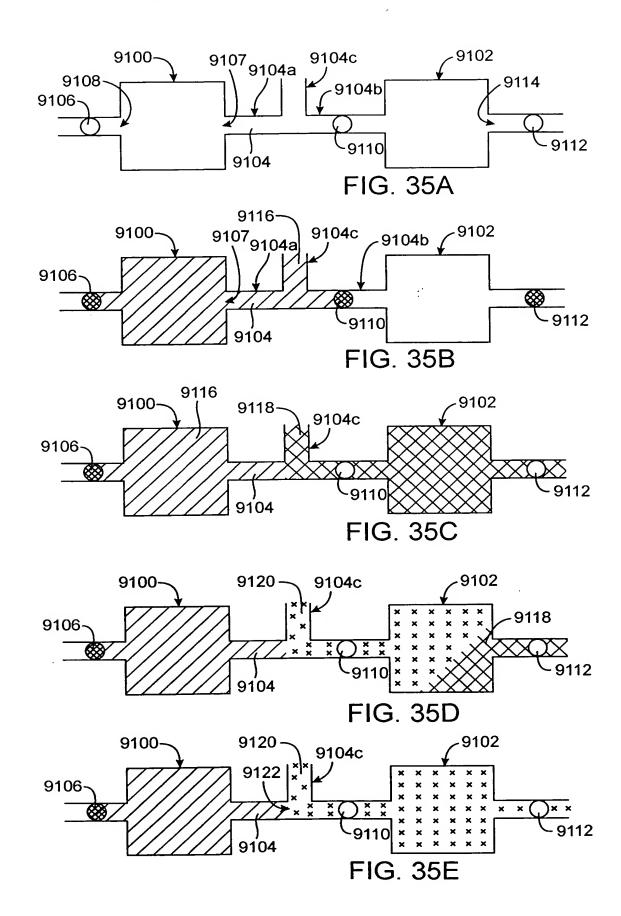
Sheet 30 of 53



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Sheet 31 of 53

1



20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 32 of 53

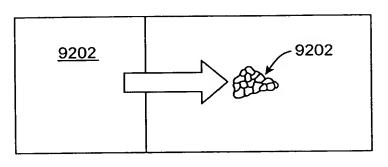


FIG. 36A (Prior Art)

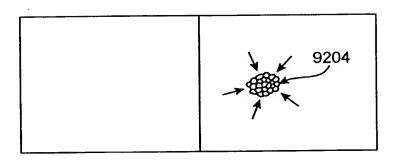
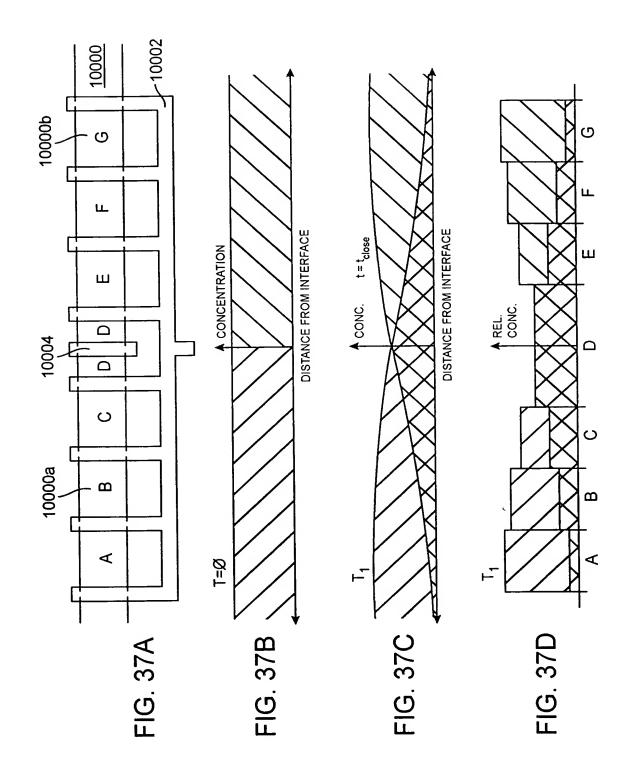
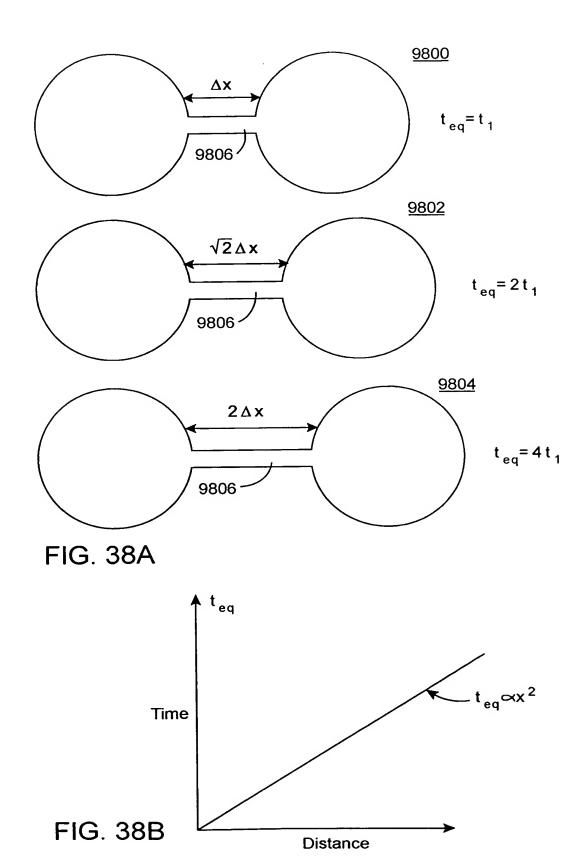


FIG. 36B

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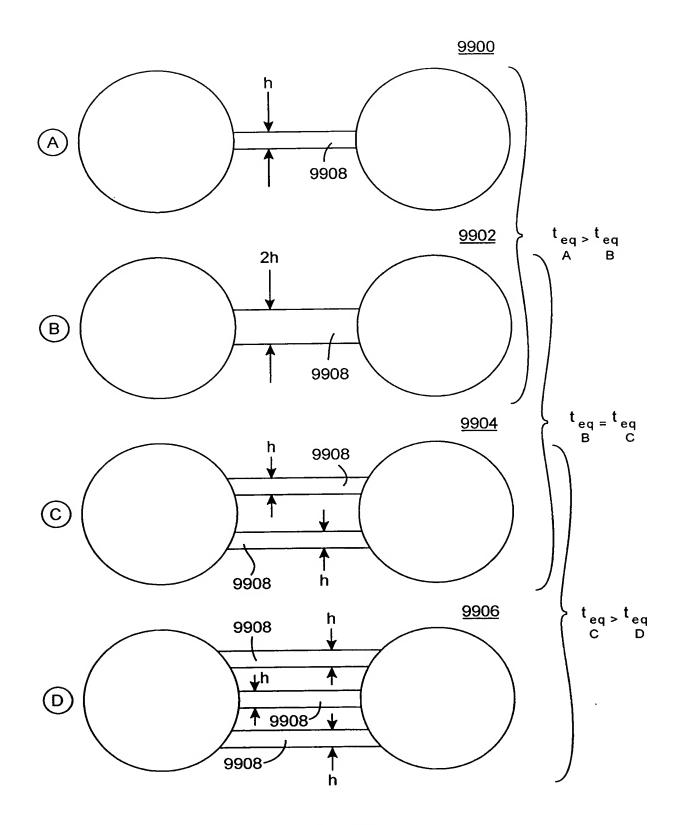
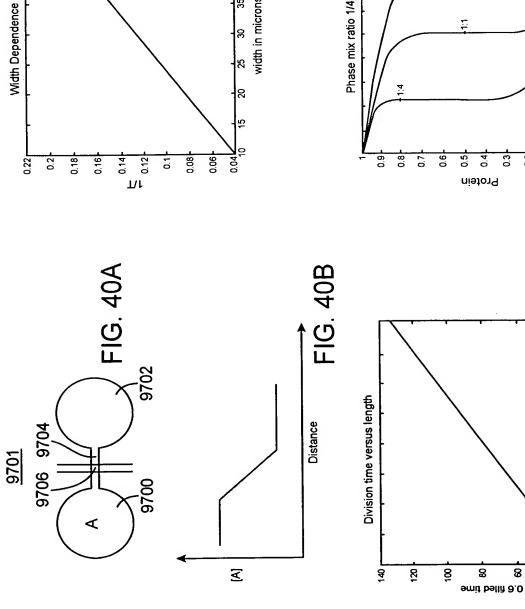


FIG. 39

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 36 of 53 FIG. 42 FIG. 43 <u>7.</u> 0.7 width in microns 33 Phase mix ratio 1/4 9.0 0.5 Salt 0.4 03 0.1 0.2 0.08 90.0 6.0 0.8 0.7 0.6 0.5 0.4 0.2 0.3 0.14 0.12 Protein IJι FIG. 41 FIG. 40B Channel length (x300um)

용

8

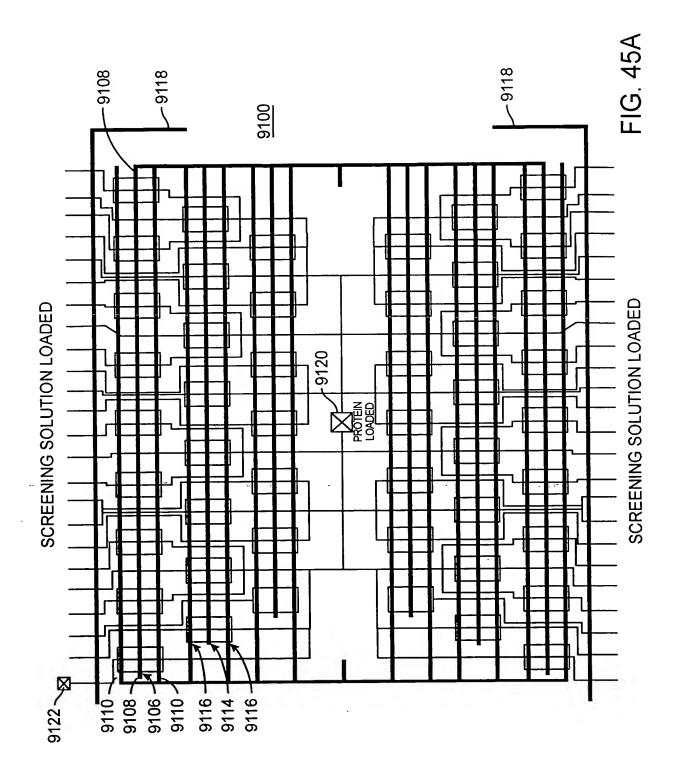


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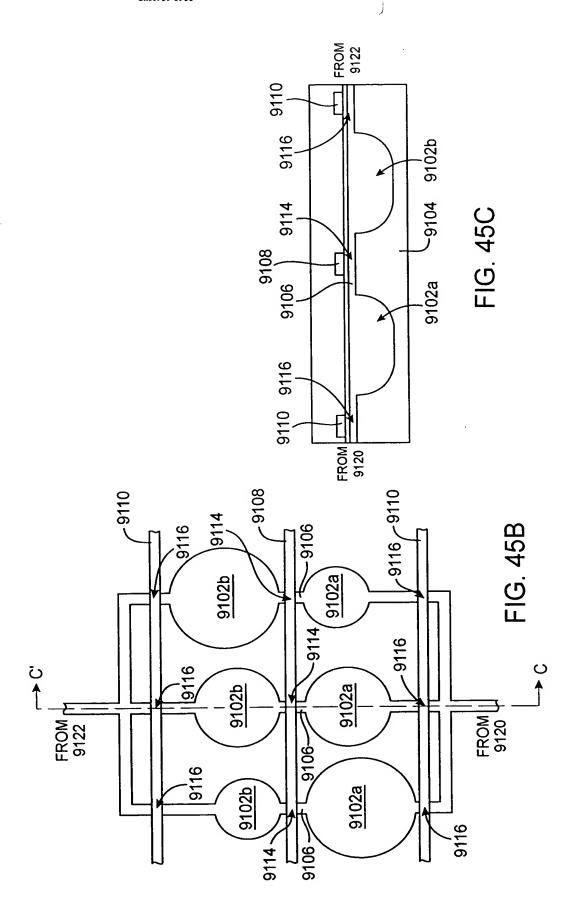
20174C-004960US, Appln No. To be assigned Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 37 of 53

11016 -<u>11005</u> 11012b áaaaaaaa -11011 11012a م م م م م م م م م م FIG. 44 -11002 -11006 

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20174C-004960US, Appln No. To be assigned Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 40 of 53

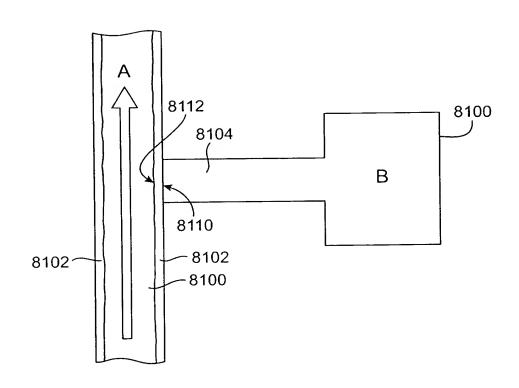
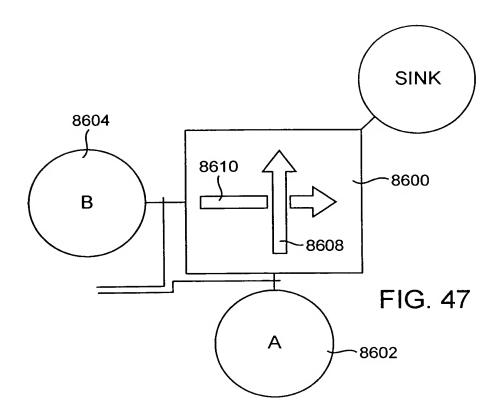
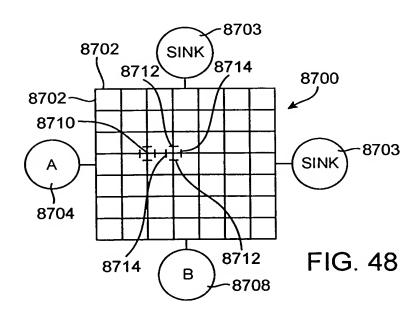


FIG. 46

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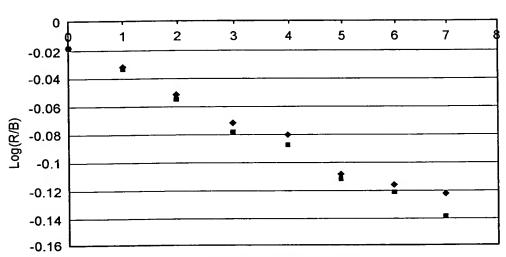


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Log(R/B) Vrs #Slugs



Number of Slugs Injected

FIG. 50

20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 44 of 53



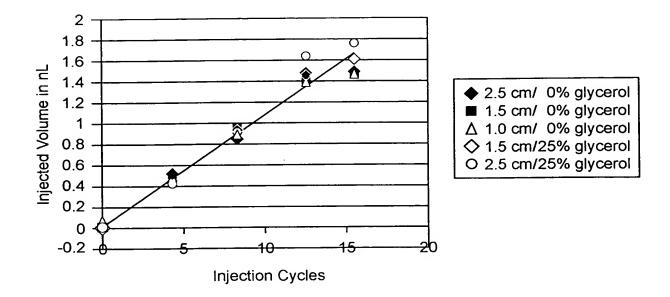


FIG. 51

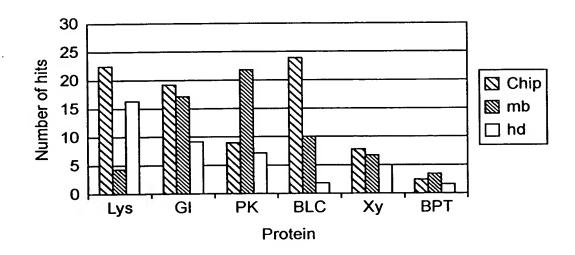
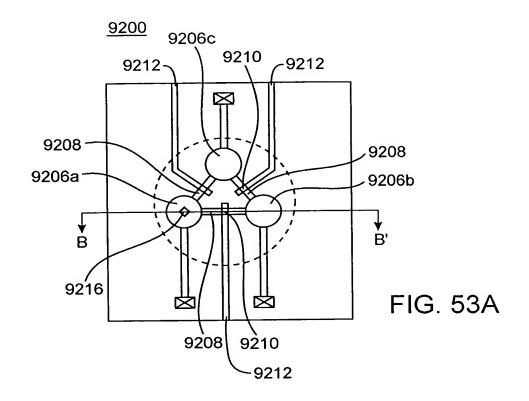
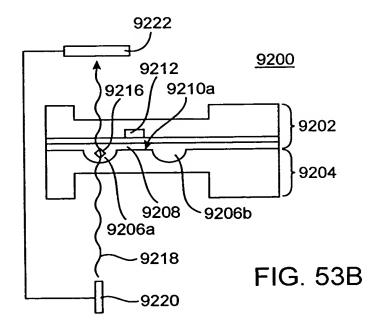


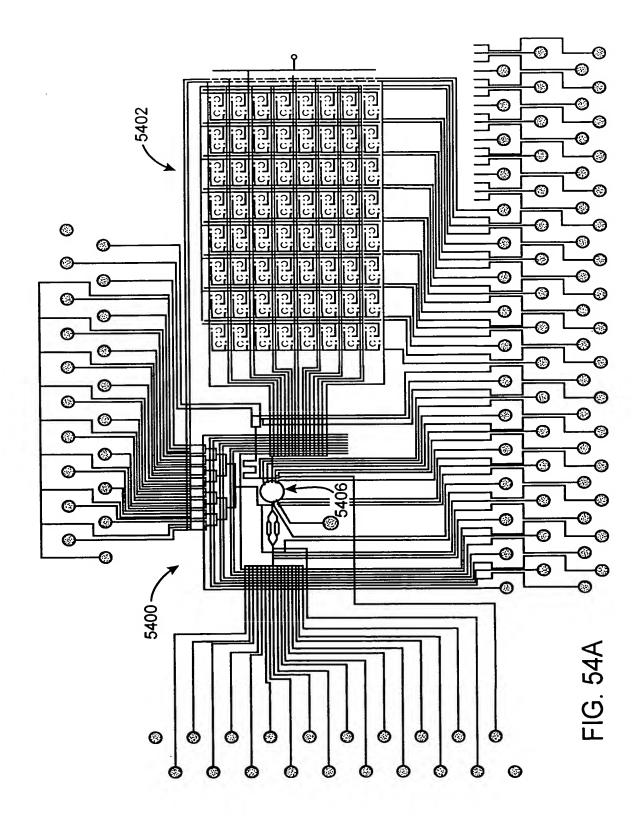
FIG. 52

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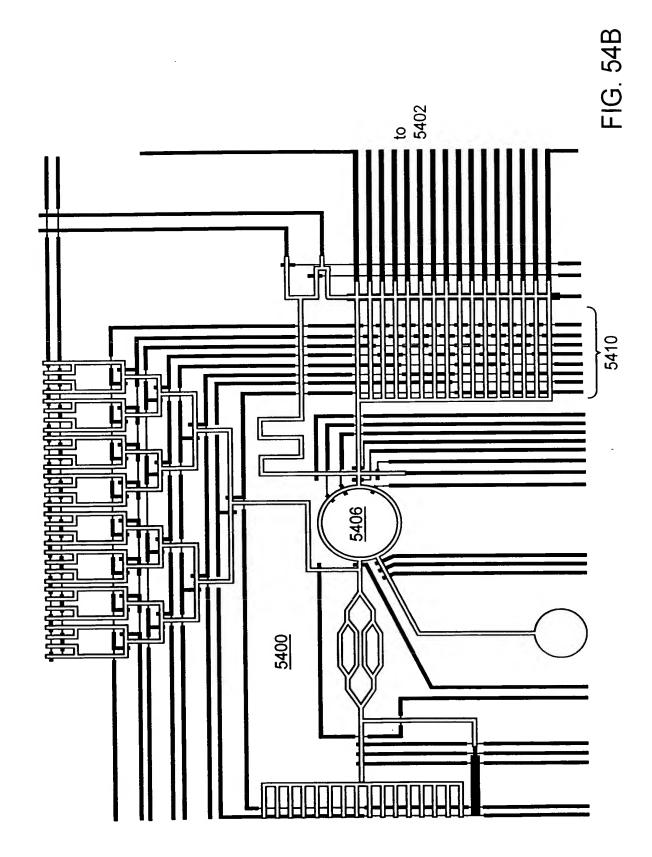


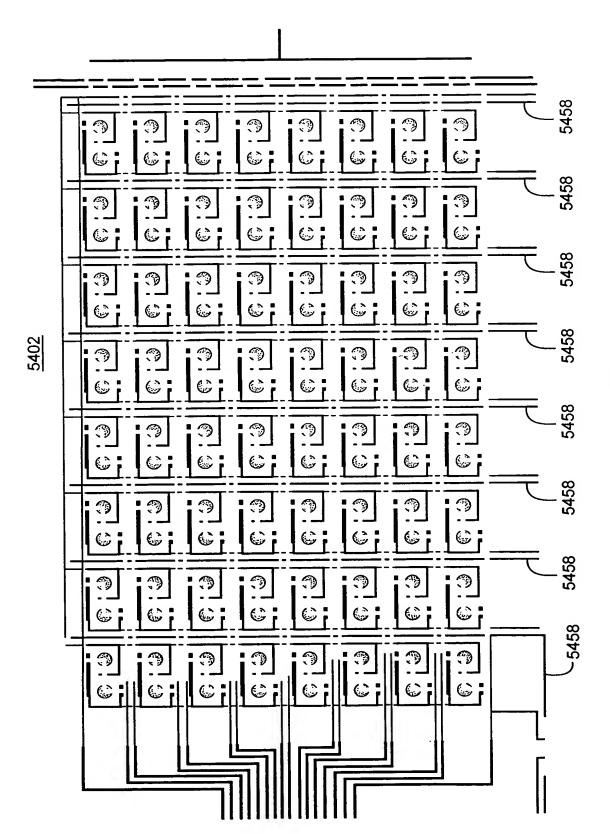


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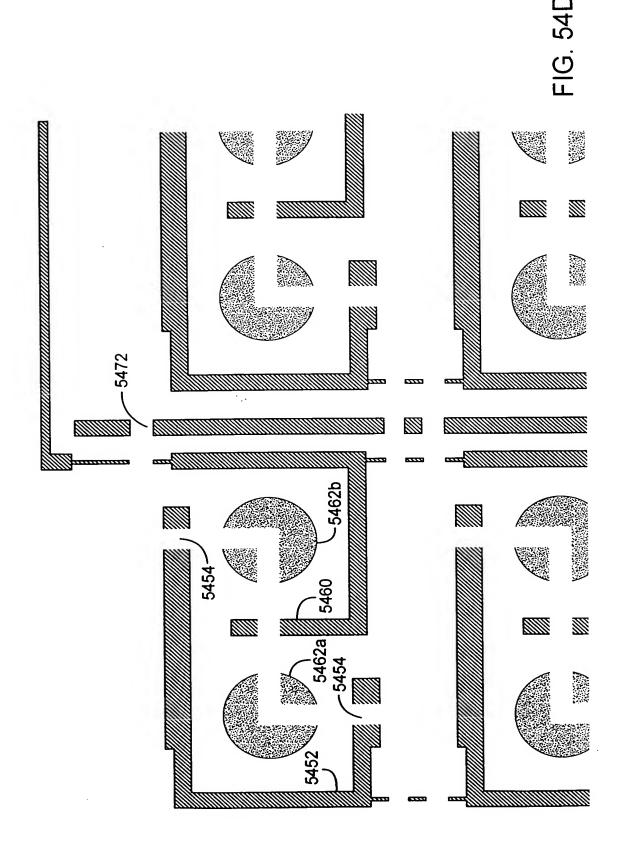


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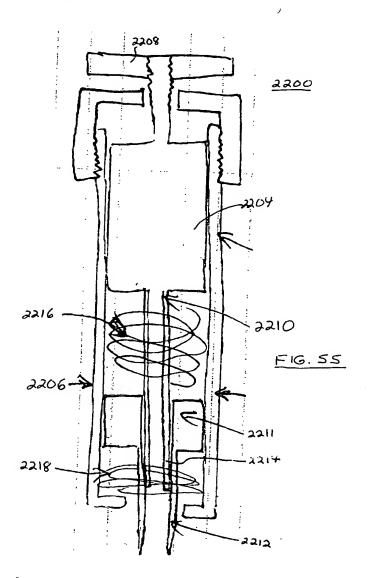


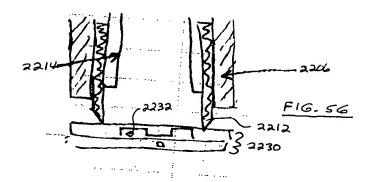
20174C-004960US, Appln No. <u>To be assigned</u> Kent J. Tobin, Reg. No. 39,496 Telephone: 650-326-2400 Title: Microfluidic Protein Crystallography... Inventors: Carl L. Hansen et al. Sheet 49 of 53



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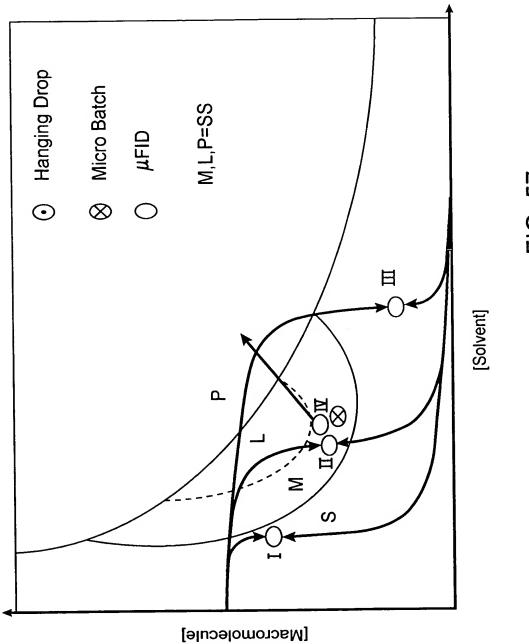
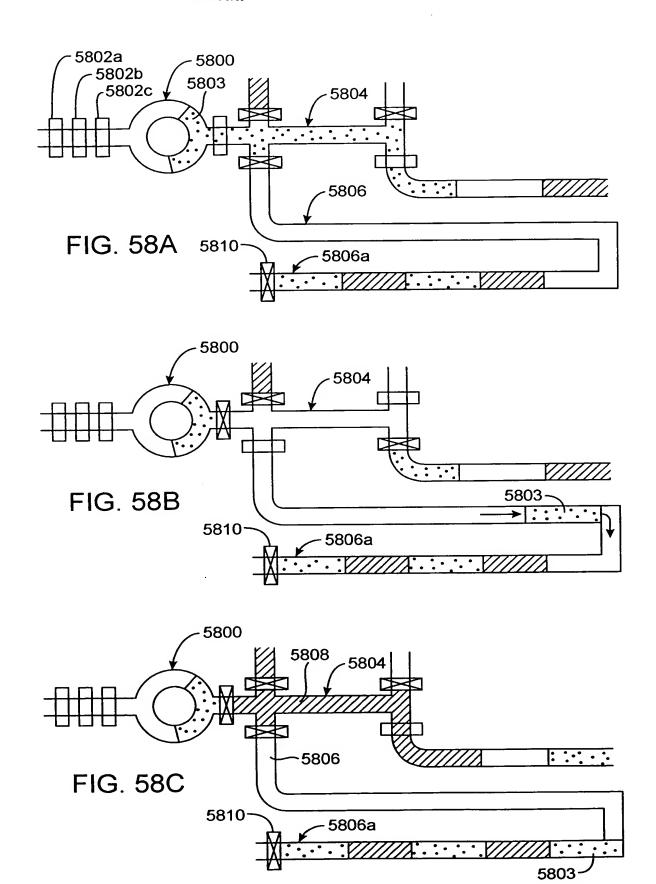


FIG 57



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